

Improving the Chemical Safety of Food Contact Articles: Food Packaging Forum's Work in 2020

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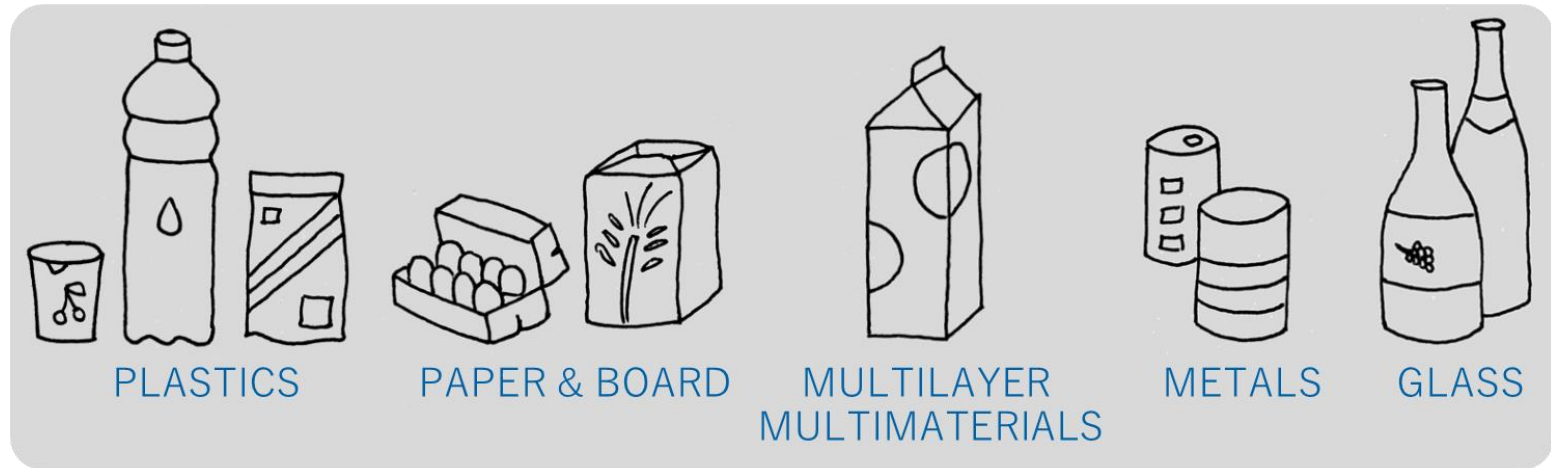
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Problems of Food Packaging and Health

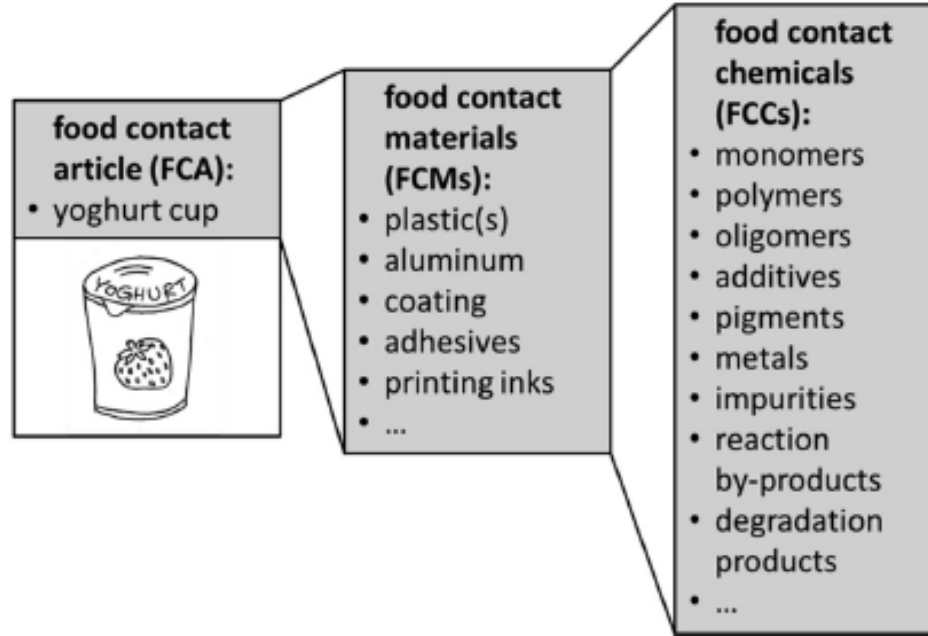
- High chemical complexity of many types of food packaging
- Around 12'000 chemicals may be used to make FCMs and FCAs¹



FCMs: food contact materials, FCAs: food contact articles, FCCs: food contact chemicals

Food Contact Chemicals, Food Contact Materials, and Food Contact Articles

- FCAs
- FCMs
- FCCs



Problems of Food Packaging and Health

■ Specifically:

- FCMs and FCAs may contain chemicals that are **hazardous**, e.g. Mineral Oil Aromatic Hydrocarbons (MOAH) or phthalates
- FCMs contain many chemicals that are only **poorly characterized**
- FCMs contain many chemicals that are **unknown** as part of the NIAS: non-intentionally added substances
- Chemicals in FCMs migrate into food, causing **human exposure**

Problems of Food Packaging and Health

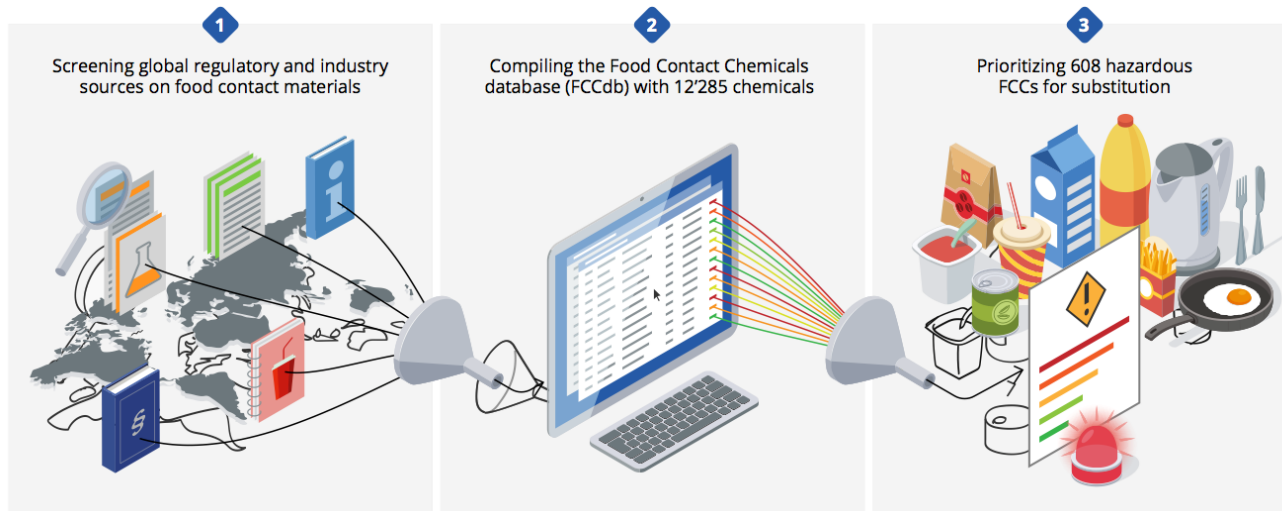
- There is a lot of uncertainty associated with the human exposure to FCCs and with the health effects to which these chemicals may contribute.

Problems of Food Packaging and Health

- There is a lot of uncertainty associated with the human exposure to FCCs and with the health effects to which these chemicals may contribute.
- **How can this uncertainty be reduced?!**

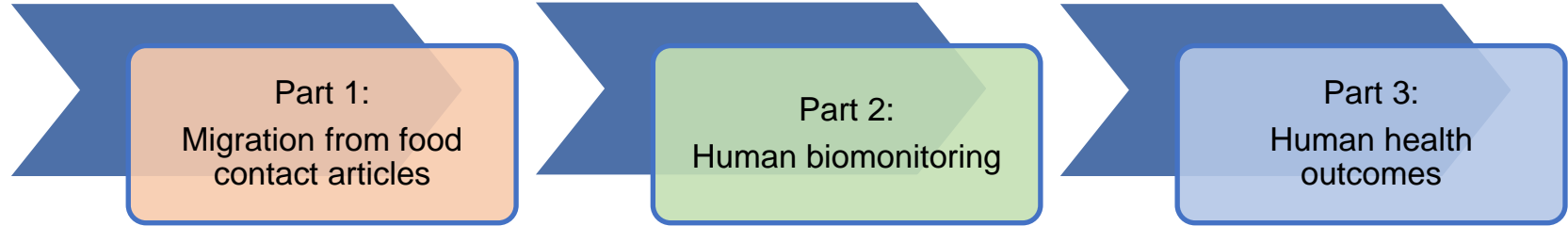
A First Database of Food Contact Chemicals

- A database of 12'000 FCCs: the FCCdb
 - is based on 56 publicly available sources (legislation, industry, NGO lists)
 - covers intentionally added substances (IAS)
 - includes all types of FCMs



K. Groh et al. (2012) *Environment International*, in press

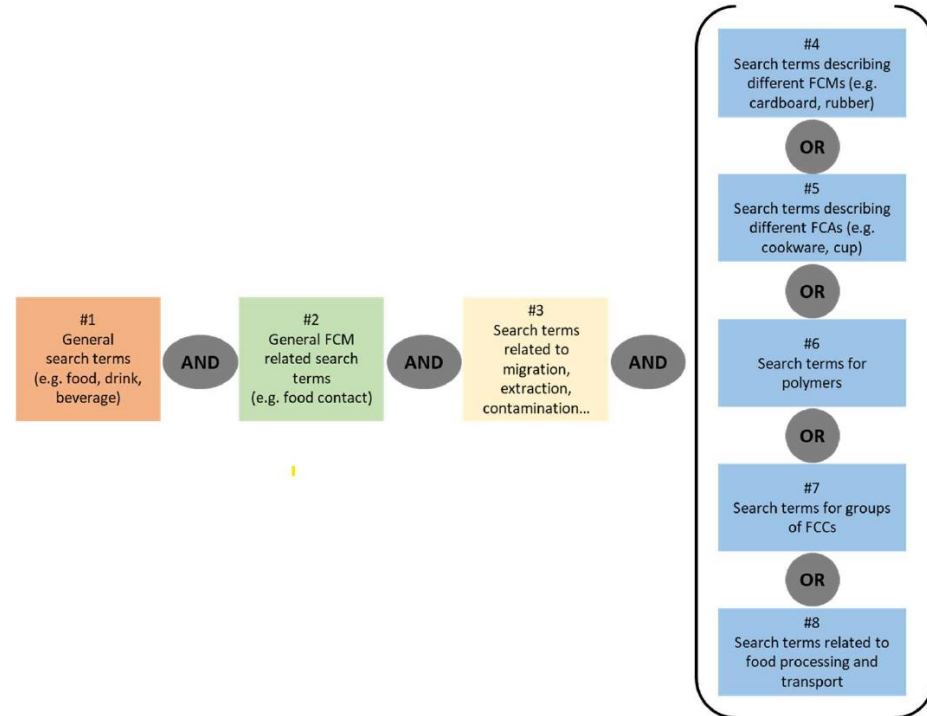
The FCCH Project: Food Contact Chemicals and Human Health



- **Part 1 (ongoing):**
For which FCCs is there evidence for migration and/or extraction from FCMs and FCAs?
- **Part 2 (2021):**
For which FCCs is there evidence for human exposure from biomonitoring studies?
- **Part 3 (2021):**
How are FCCs that humans are exposed to associated with adverse human health outcomes?

The FCCH Project, Part 1

- Find as many relevant chemicals as possible
- Starting point: broad and systematic search of the scientific literature (many publication databases)
- Result: more than 12'000 potentially relevant publications

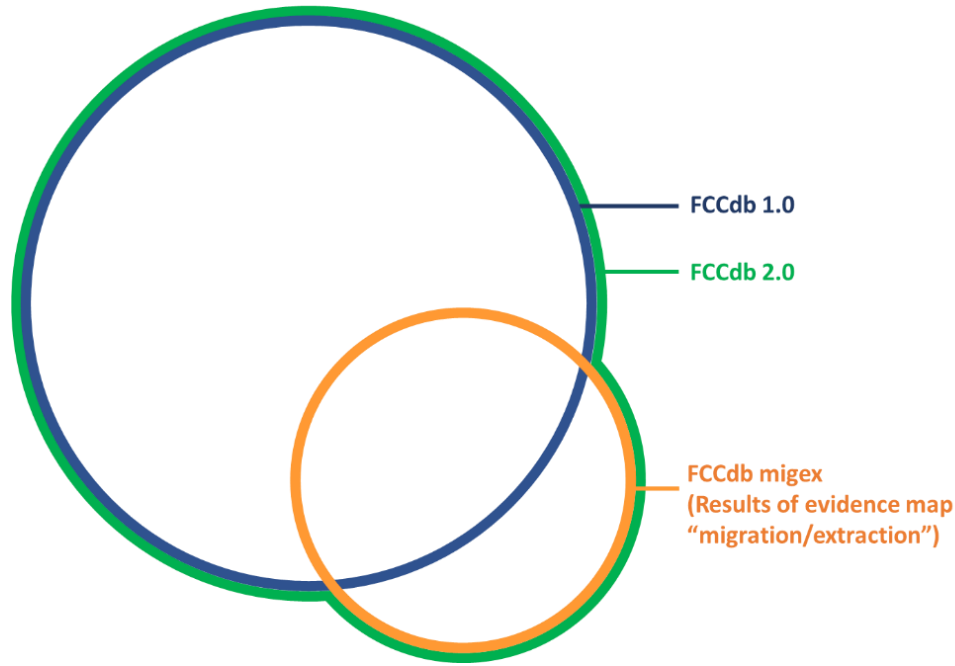


The FCCH Project, Part 1

- Screening of the 12'000 publications
 - FCC can be identified with sufficient certainty
 - FCC originates from an FCM or FCA (migration/extraction, experimental evidence)
- 1200 publications left
- Question for the remaining 1200 publications: what is reported about specific FCCs and their migration from FCMs and FCAs?
- Extract this chemical-specific information, build new database

The FCCH Project, Part 1

- Data extraction still ongoing; outcome: “FCCdb migex” database



A Scientific Consensus Statement on FCCs and Human Health

Muncke *et al. Environmental Health* (2020) 19:25
<https://doi.org/10.1186/s12940-020-0572-5>


Environmental Health

COMMENTARY

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Impacts of food contact chemicals on human health: a consensus statement



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A Scientific Consensus Statement on FCCs and Health

- Three parts
 - Facts based on established scientific data and findings
 - Areas of uncertainty
 - Options for improvement

A Scientific Consensus Statement on FCCs and Health

- Where are improvements needed?
 - More types of toxic effects to be included, in particular endocrine disruption
 - Mixture toxicity: what are the impacts of many chemicals together?
 - Eliminate hazardous substances from FCMs and FCAs
 - Multi-stakeholder dialogue to identify solutions

Many thanks to Birgit Geueke and all of the FPF team

Thank you for your attention